

# Breastfeeding promotes healthy growth

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A PhD project from LIFE – the Faculty of Life Sciences at the University of Copenhagen has shown that breastfed children follow a different growth pattern than non-breastfed children. Breastfeeding lowers the levels of the growth hormones IGF-I and insulin in the blood, which means that growth is slightly slower. This is believed to reduce the risk of overweight and diabetes later in life.

The PhD project is part of SKOT, a large-scale Danish study of small children, diet and wellbeing, which has followed and examined 330 healthy children at 9, 18 and 36 months.

The SKOT project is to increase our knowledge of what Danish children eat in the critical phase when they move from breastmilk or formula to solids. The transition is critical because the food intake during this period has a significant bearing on the child's growth and risk of developing lifestyle diseases later in life.

PhD Anja Lykke Madsen has gathered the first results of the SKOT study in her PhD project.

"We can see that breastfeeding has a significant, measurable effect on the important growth regulators in the blood, IGF-I and insulin. The more times the child was breastfed, the lower the hormone levels. This suggests that the child has a slightly lower risk of becoming overweight later in childhood. At the same time, there was a correlation between how long the children were breastfed and their weight at 18 months," says LIFE PhD Anja Lykke Madsen.

## **Mother's milk for healthy growth:**

According to Professor Kim Fleischer Michaelsen from LIFE, head of the SKOT project, the study provides valuable knowledge about the factors affecting the early onset of obesity.

"It is well-known that children who are breastfed grow slightly more slowly than children who are given formula, and it looks as if this growth pattern is optimal because it reduces the risk of developing lifestyle diseases later in life. However, the new results from SKOT show that [breastfeeding](#) also affects levels of IGF-I and insulin at 9 months, i.e. at a time when the children are well into eating solids," says Professor Kim Fleischer Michaelsen from LIFE. He continues:

"Looking at the children's growth up to 18 months identified a number of interesting correlations which may improve our understanding of the mechanisms behind early-onset obesity. The longer the children were breastfed, the lower their weight at 18 months. It's as simple as that."

The study also showed that the longer the children slept, the smaller their waist circumference. Moreover, the children of mothers who gained a lot of weight during pregnancy had a slightly thicker layer of subcutaneous fat than the children of mothers who put on less weight.

## **Need to study long-term effects:**

Kim Fleischer Michaelsen stresses the need to follow up and to continue to examine the children to establish the long-term effects, while also looking at correlations in other studies.

**More information:** Anja Lykke Madsen defended her PhD thesis on 9 December 2011 at LIFE - the Faculty of Life Sciences at the University

of Copenhagen.

Provided by University of Copenhagen

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